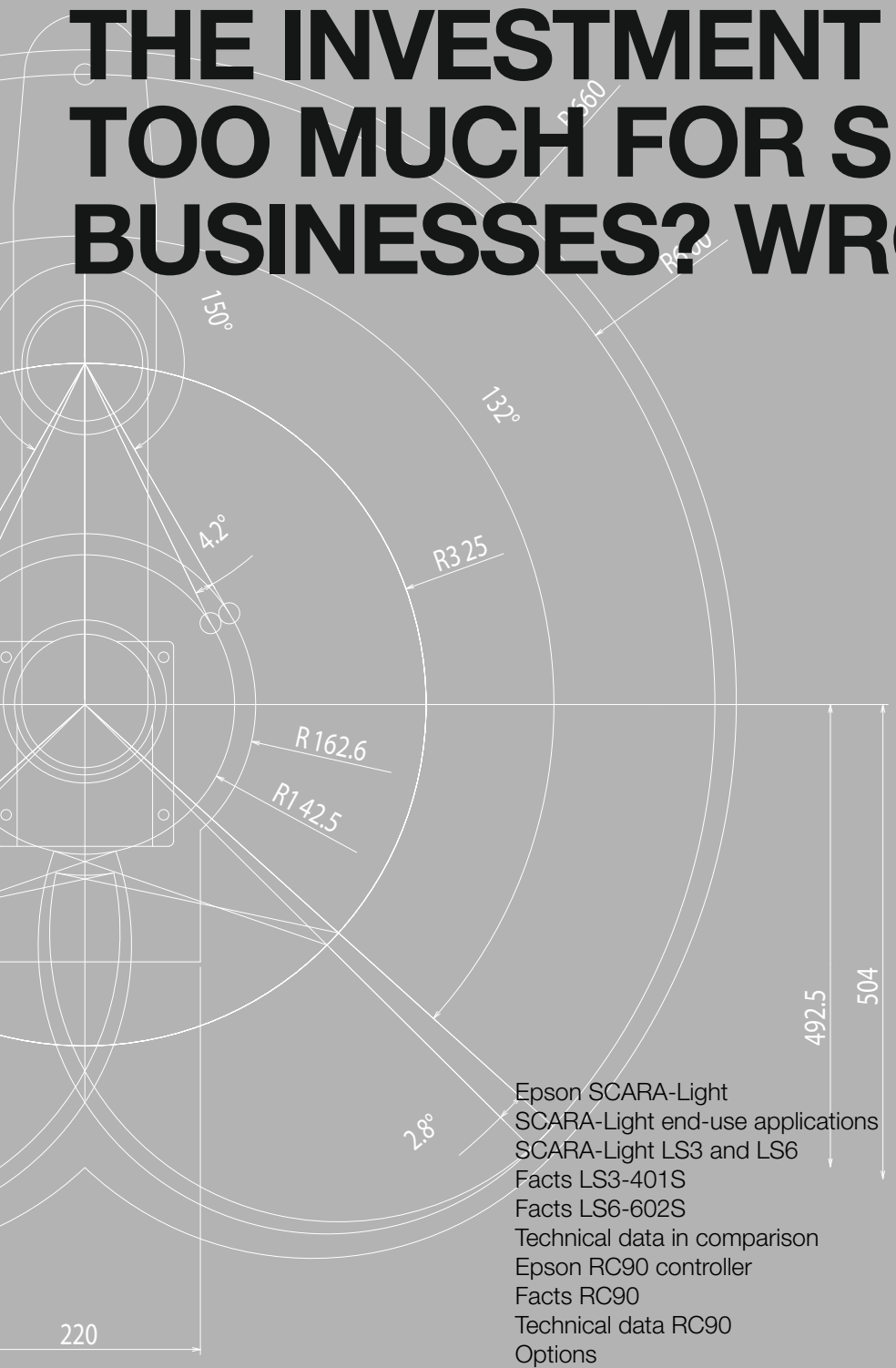
SIMPLE.
INTELLIGENT.

LS
SCARA
LIGHT

EPSON®
EXCEED YOUR VISION

INDUSTRIAL ROBOTS ONLY PAY OFF FROM A CERTAIN SIZE PRODUCTION RUN? THE INVESTMENT IS TOO MUCH FOR SMALL BUSINESSES? WRONG.



www.epson.de/scaralight

The Epson SCARA-Light is found in regions where generally only linear systems or other less-flexible machines were previously in place. It offers you what you need. Exactly. And it is extremely flexible. Its programming and application are particularly simple. Fast and as reliable as you expect from Epson.

No more and no less. It's the Epson SCARA-Light.

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AS POWERFUL AS YOU NEED. AS AFFORDABLE AS YOU HAVE WANTED.

- More flexible than linear systems
- Simple to program
- Powerful Epson RC90 controller
- Simulation software included free
- Reliable and durable
- Versatile

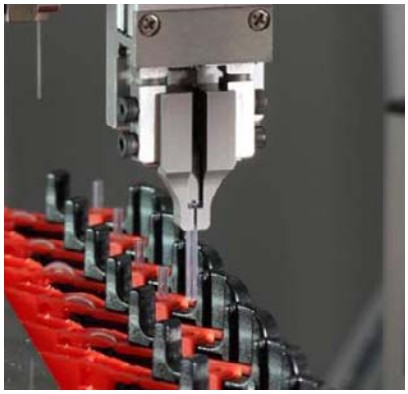
SCARA-Light LS3-401S

SCARA-Light LS6-602S

SO MANY POSSIBILITIES ...

The new Epson LS3 and LS6 pay off especially quickly in applications such as assembling, fitting, transporting and other typical pick & place operations.

For production of medicines and laboratory diagnoses or for the semiconductor industry, both SCARA-Light robots are available in cleanroom class ISO4.



SCARA-Light LS3-401C

SCARA-Light LS6-602C

EXTREMELY COMPACT.
UNBELIEVABLY FAST.
EVEN MORE AMAZING:
THE PRICE.

SCARA-LIGHT
LS3-401S

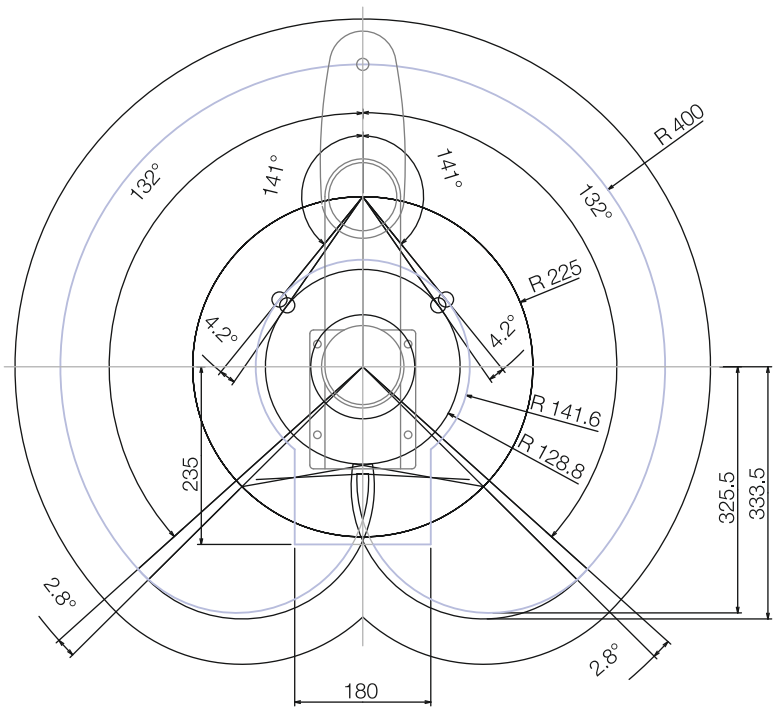
Payload 3 kg
Reach 400 mm
Z-Hub 150 mm / 120 mm (cleanroom version)

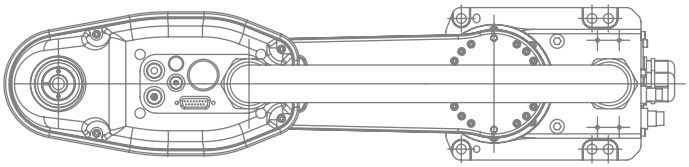
from EUR 10,000
excluding sales tax

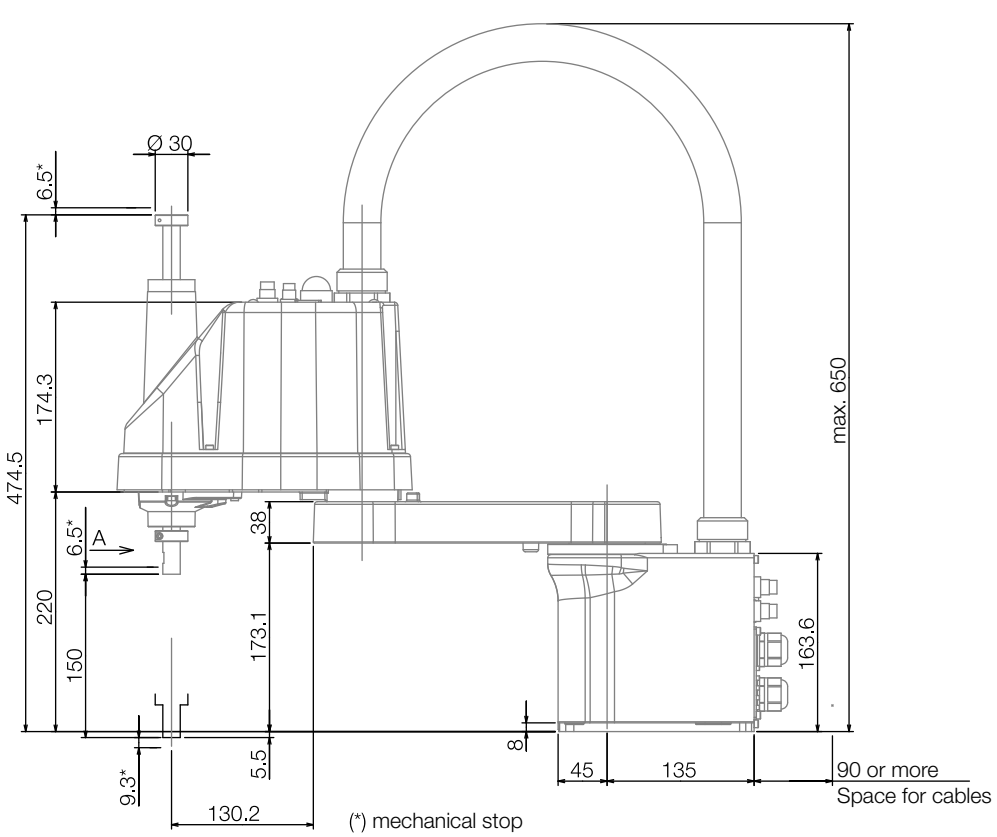
www.epson-store.de/fa

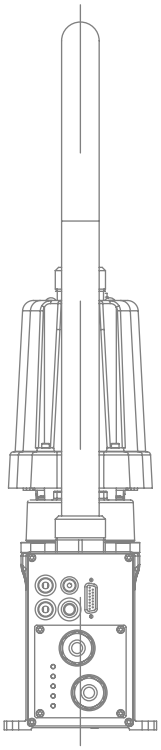
All CAD files are available for download from
www.epson.de/scaralight

Measurements in mm









SCARA-LIGHT
LS6-602S

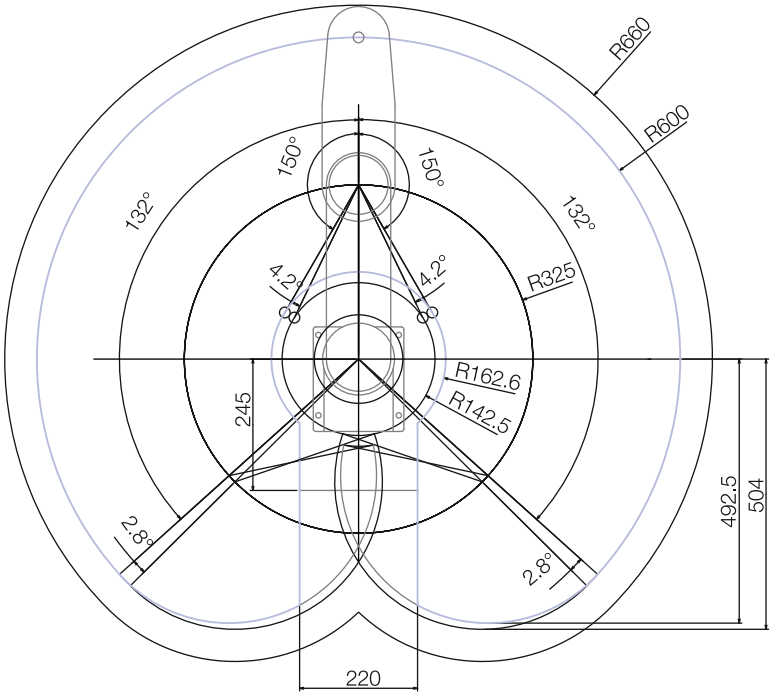
Payload 6 kg
Reach 600 mm
Z-Hub 200 mm / 170 mm (cleanroom version)

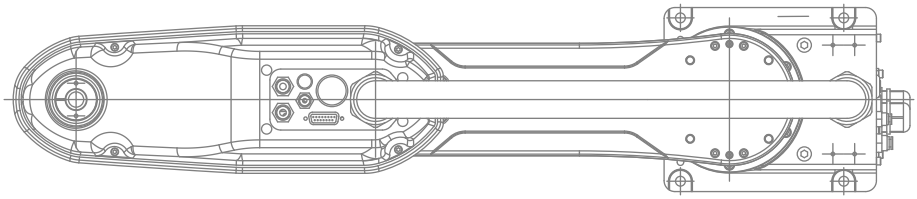
from EUR 13,000
excluding sales tax

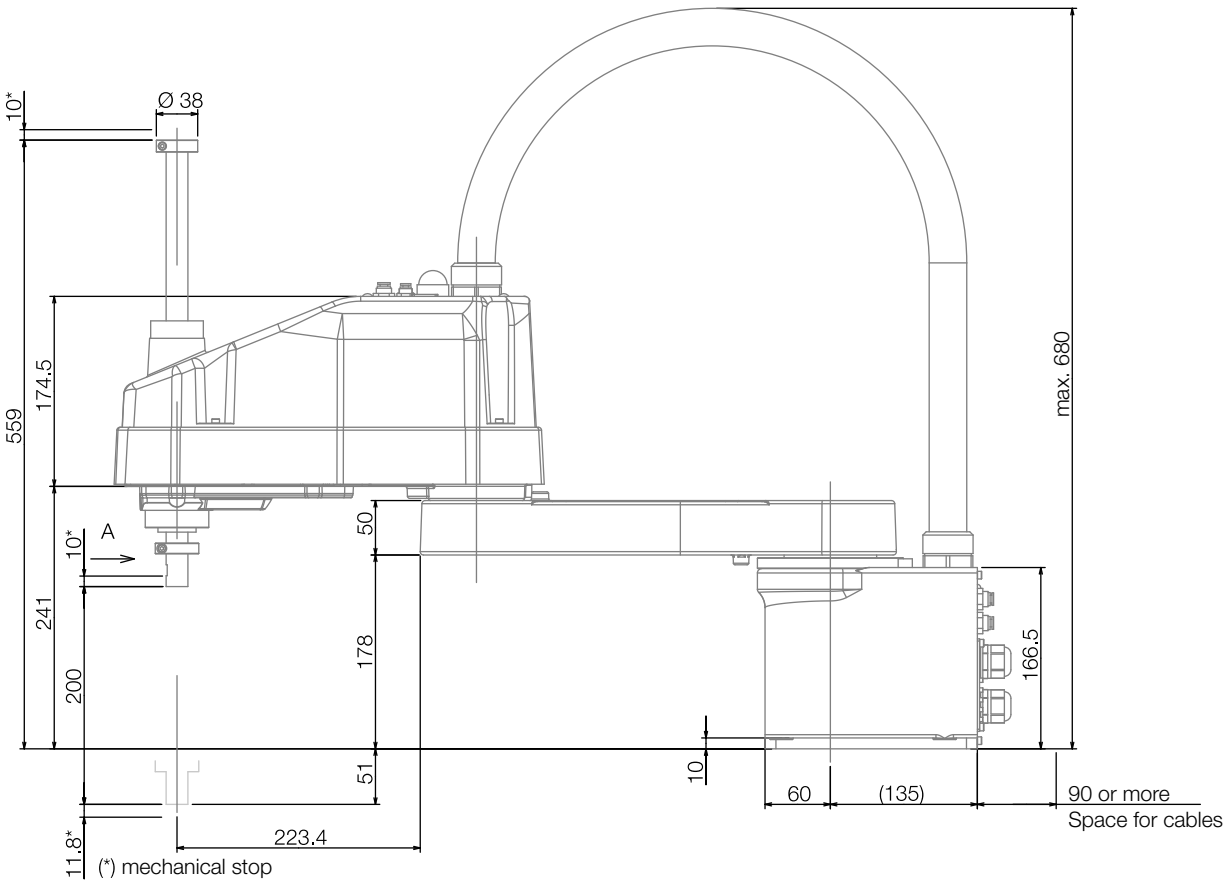
www.epson-store.de/fa

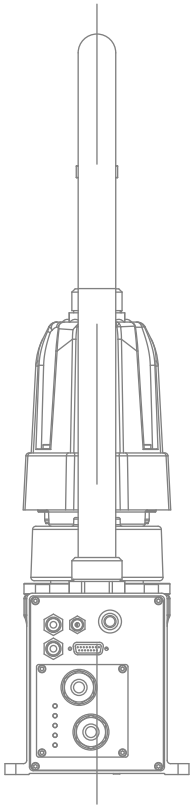
All CAD files are available for download from
www.epson.de/scaralight

Measurements in mm









AT A GLANCE – **AND IN COMPARISON**

	SCARA-Light **LS3-401S**	SCARA-Light **LS6-602S**
Design	4 axes	4 axes
Payload	3 kg	6 kg
Horizontal reach	400 mm	600 mm
Vertical reach	150 mm	200 mm
Arm length	**J1** 225 mm + **J2** 175 mm	**J1** 325 mm + **J2** 275 mm
Orientation reach	**J4** +/- 360°	**J4** +/- 360°
Horizontal repeatability	**J1, J2** + / - 0.01 mm	**J1, J2** + / - 0.02 mm
Vertical repeatability	**J3** + / - 0.01 mm	**J3** + / - 0.01 mm
Orientation repeatability	**J4** + / - 0.01°	**J4** + / - 0.01°
Max. envelope	**J1** + / - 132°, **J2** +/- 141° **J3** 150 mm, **J4** +/- 360°	**J1** +/-132°, **J2** +/-150° **J3** 200 mm, **J4** +/- 360°
Max. axis speed	**J1, J2** 6,000 mm/s **J3** 1,100 mm/s, **J4** 2,600°/s	**J1, J2** 6,800 mm/s **J3** 1,100 mm/s, **J4** 2,000°/s
Permitted moment of inertia	nom. 0.005 kg*m² max. 0.05 kg*m²	nom. 0.01 kg*m² max. 0.12 kg*m²
Permanent insertion force	100 N	100 N
Electrical user wiring	1 D-sub (15 pin)	1 D-sub (15 pin)
Pneumatic user wiring	3 (1x Ø 4 mm and 2x Ø 6 mm)	3 (1x Ø 4 mm and 2x Ø 6 mm)
Type of mount	Floor	Floor
Z-axis external / internal	Ø 16 H7 / Ø 11 mm	Ø 20 H7 / Ø 14 mm
Cleanroom option	ISO 4	ISO 4
Power and signal cable	3 m	3 m
Certificates	RoHS Directive: 2002/92/EC ANSI/RIA: R15.06-1999 NFPA 79 (2007 Edition) CSA/CAN Z434-03 (February 2003) EC Machinery Directive 2006/42/EC	RoHS Directive: 2002/92/EC ANSI/RIA: R15.06-1999 NFPA 79 (2007 Edition) CSA/CAN Z434-03 (February 2003) EC Machinery Directive 2006/42/EC
Weight	14 kg	17 kg
Price excluding sales tax	**from EUR 10,000**	**from EUR 13,000**

J1 = Axis 1
J2 = Axis 2
J3 = Axis 3
J4 = Axis 4

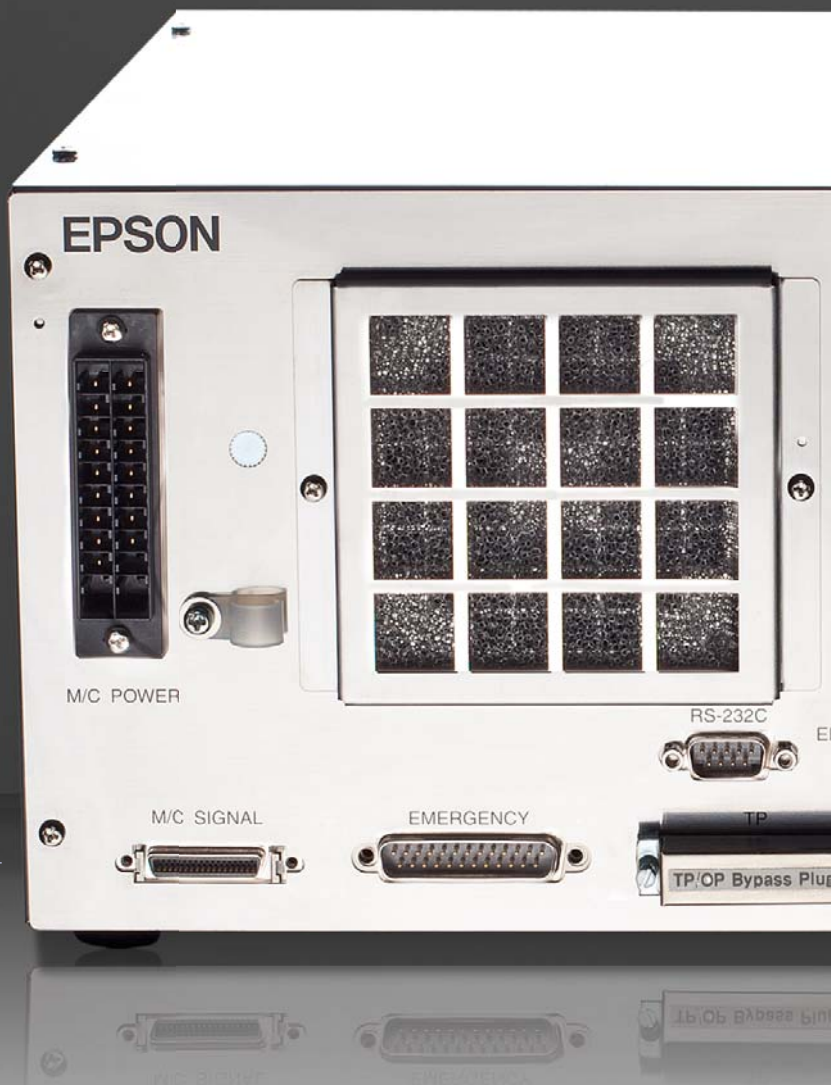
EPSON RC90 CONTROLLER: THE LIGHTWEIGHT WINS WITH ITS STRONG PERFORMANCE.

- Smallest and lightest controller of its class on the market
- Compact: Even fits in the control cabinet
- Plug-and-Produce
- Simple to program and operate, thanks to the proven Epson RC+ development environment
- Back-up to a USB stick is possible
- Various ways to be mounted

Graded safety systems (safety door circuit/emergency stop circuit)

Includes communication sockets RS-232C, USB, I/O and Ethernet

EPSON **RC90 CONTROLLER**



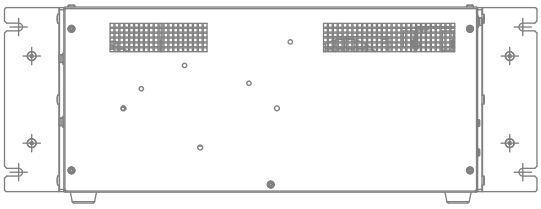
EPSON CONTROLLER **RC90**

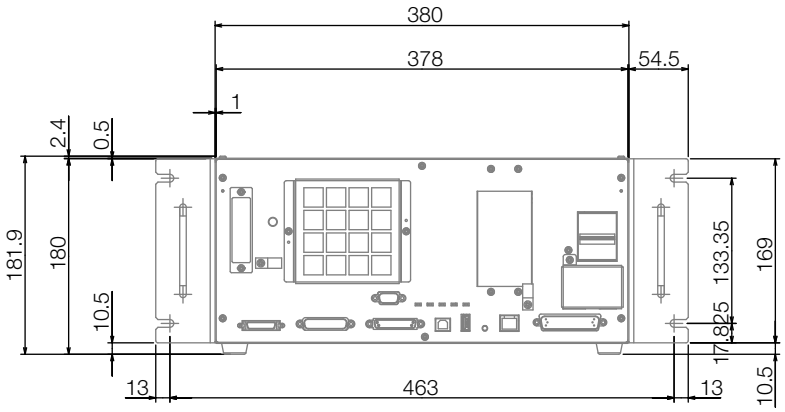
Interfaces RS-232C, USB, Ethernet, 24/16 I/O
Dimensions 380 x 350 x 180 mm
Weight 7.5 kg

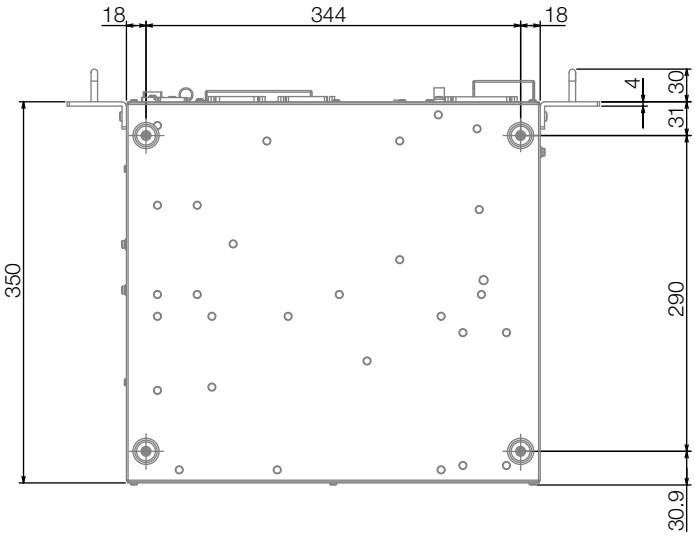
included in SCARA-Light price

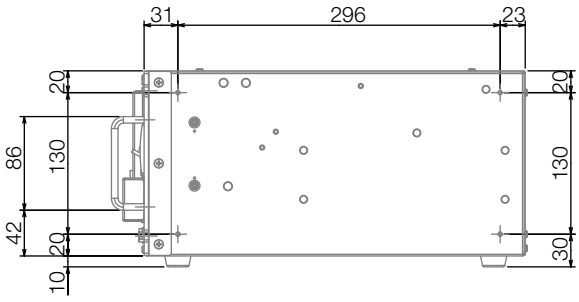
All CAD files are available for download from
www.epson.de/scaralight

Measurements in mm









EVERYTHING UNDER CONTROL **AND AT A GLANCE**

	RC90 **controller**
Interfaces	1x USB memory, 1x USB device 1x 10/100 base T-Ethernet 24/16 standard I/O channels — 8/8 as remote RS-232C Standard 1x channel
CPU	32-Bit Microprocessor
Hardware option	Teach Pendant 2
Expansion card options	**I/O expansion** 24/16, up to 2 additional cards **I/O slave-fieldbus cards** DeviceNet, Profibus, CC-Link, 1 additional card each possible **Serial interface RS-232C** 2 channels per card, up to 2 additional cards
Software options	VB guide External Control Point Motion (ECP) GUI Builder
Development environment	Epson **RC+ 5.0**
Programming language	Epson **SPEL+** multitasking possible
Supply voltage	AC 200 V to AC 240 V, single-phase 50/60 Hz
Power consumption	up to 2,500 VA — depending on manipulator model
Ambient temperature	5–40°C
Relative humidity	20% to 80% — no condensation
Safety features	EMERGENCY STOP switch, safety door input, low power mode, dynamic brake **error detection** encoder cable disconnection **detections** motor overload, motor speed error, irregular motor torque (out-of-control manipulator), overheat condition inside a motor driver module, positioning overflow — servo error, speed overflow — servo error, irregular CPU, memory check-sum error, relay deposition, over-voltage, AC power supply voltage drop, temperature anomaly, fan malfunction
Certifications	CE ANSI RIA R15.06-1999 EC Machinery Directive 2006/42/EC
Dimensions	380 x 350 x 180 mm
Weight	7.5 kg
Price excluding sales tax	**included in SCARA-Light price**

If you plan to send your plant to the USA or Asia, you generally need an NPN model of the Epson RC90 controller. If you need this model, please note this in your order. It is not possible to convert the controller retrospectively.
You can send us an e-mail at robot.infos@epson.de

THE BEST **CONNECTIONS**

The expansion cards for communication with external devices and for integration into fieldbus networks can expand your system flexibly.

Intuitive Teach Pendant TP2

The portable operating and display device fulfils all tasks regarding monitoring, operation and parametrisation. The Teach Pendant can execute different commands, including motor on/off. The teach pendant can be operated just as easily by both left-handed and right-handed users so that they can work tirelessly.

EUR 900

I/O expansion

If the 24 standard inputs and 16 outputs are not enough and you do not want to set up a fieldbus network, 24 inputs and 16 outputs per card can be added to your system. You can use a total of up to two expansion cards.

Expansion
I/O card
EUR 810

I/O cable kit expansion
EUR 370 (block and cable)

I/O kit expansion
EUR 1,080 (card and block and cable)

RS-232C serial interface

The Epson RC90 provides one serial interface by default for communicating with external accessories. With the serial expansion card, you can use a further two channels.

You can use a total of up to two expansion cards.

EUR 320

Fieldbus cards

Is your installation already provided with a fieldbus system or do you wish to reduce the effort for establishing further connections? Then you can use the following slave card options for the RC90:

Profibus
EUR 770

DeviceNet
EUR 770

CC-Link
EUR 770

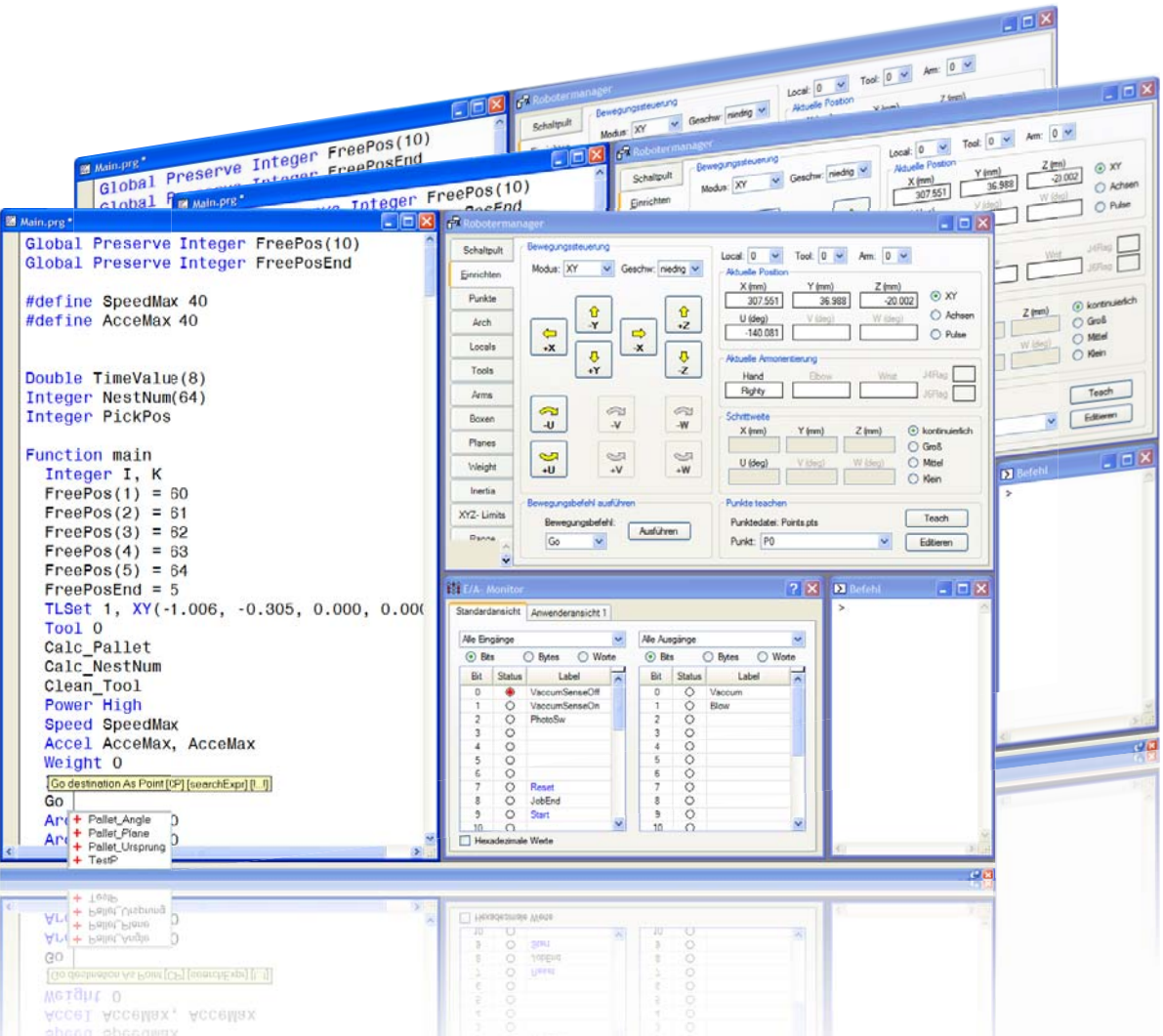
FOR SPEEDY **PROGRAMMING**

The RC+ 5.0 project management and development environment operating in the current Windows versions. The open design also allows connection to external programming environments.

With the RC+ 5.0 intuitive development environment, you have all tools for fast and efficient programming at your fingertips.

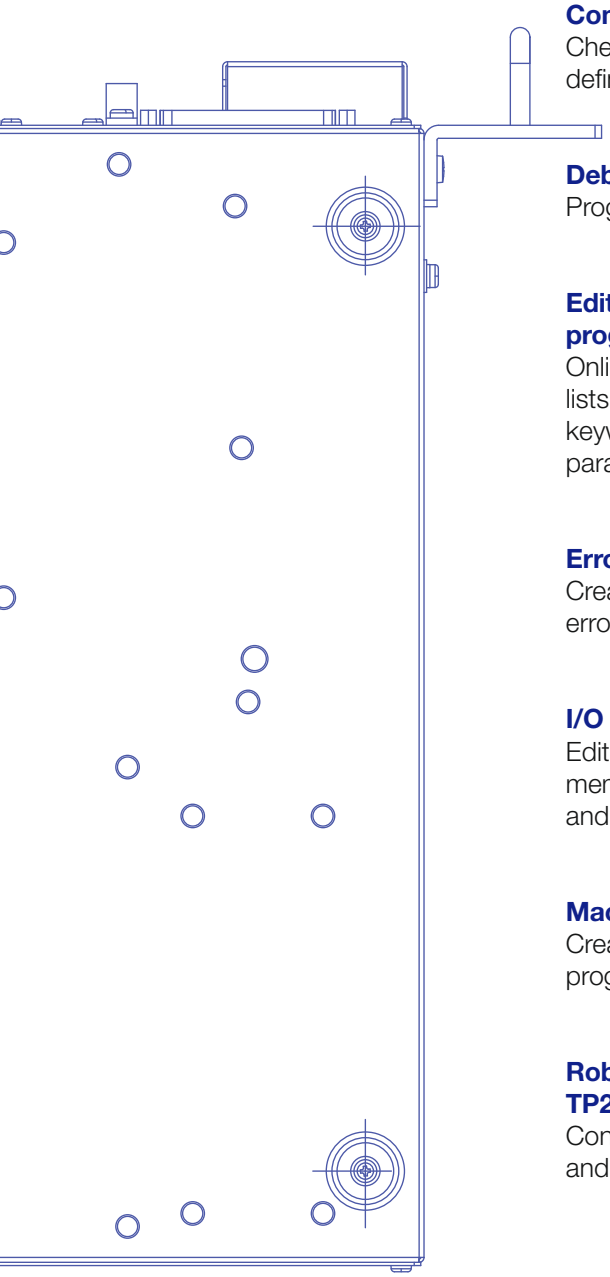
The Epson RC90 controller communicates via USB or Ethernet. Syntax Colouring, Debugger, input assistance and a freely definable interface assist you during development.

- Development environment for applications with the Epson SPEL+ robot language
- Parallel operation of multiple RC+ 5.0 applications is possible
- Integrated image processing
- Diverse interface connections
- Programming environment in German, English and French languages



COMPLEX PROJECTS **MADE SIMPLE**

With these integrated software tools, you have everything you need to program efficiently.



Command
Single-line command editor

Compiler
Check of sequence programs (syntax, definition, value range and much more)

Debugger
Program with breakpoints/jog mode

Editor: Creation of SPEL+ sequence programs
Online Help, Syntax Check, label lists, detection and colour mode of keywords, parameters and comments, parameter list, defined jump

Error editor
Creation of own application-specific error messages

I/O label editor and monitor
Editing and view status of labels for memory I/O / fieldbus I/O for bit, byte and word data widths

Macro editor
Creation of a SPEL+ program as program help

Robot Manager — control also via TP2
Contains all robot-related information and controls in well-arranged windows

Stack editor
Display of program branching

System history
Recording of errors, events, warnings (diagnostics)

Task Manager
Display of called multitasks and their status, as well as the current program line

Variable editor
Display/editing of current variable values

Maintenance manager
Creation/input/display of backups, controller reset

IT JUST **OFFERS MORE**

In addition to the scope of supply, you can equip the LS robot system with hardware and software options to suit your individual needs.

SCARA-Light scope of supply

- Epson robot and controller
- 1 Epson RC+ robot program CD including a simulator
- 2 sets of mounting brackets for the RC90 robot controller
- 1 set 3 m motor and signal cable
- 1 emergency stop connector
- 1 standard I/O connector
- 1 set user wiring connector
- 1 back-up disc for the RC90 robot controller
- 1 USB programming cable (RC90)
- Manuals on CD
- 1 Installation/safety manual

Manipulator options

Longer motor and signal cables
5 m / 10 m
EUR 450 / EUR 520

Tool adaptor
for easy mounting of end effectors to the shaft
EUR 400

Additional software options

External Control Point (ECP)
For determining coordinates
EUR 500

VB guide
for integrating into external software
EUR 600

Vision Guide 5.0
For complex applications based on image processing
EUR 2,070 (excluding camera)

GUI builder
For the fast and simple creation of an individual user interface based on the Epson programming language SPEL+
EUR 520

TRIAL & ERROR — **WHY NOT?!**

Before using the Epson LS in your application, you can compare and visualise processes risk-free.

PHASE 1 — **DESIGN**

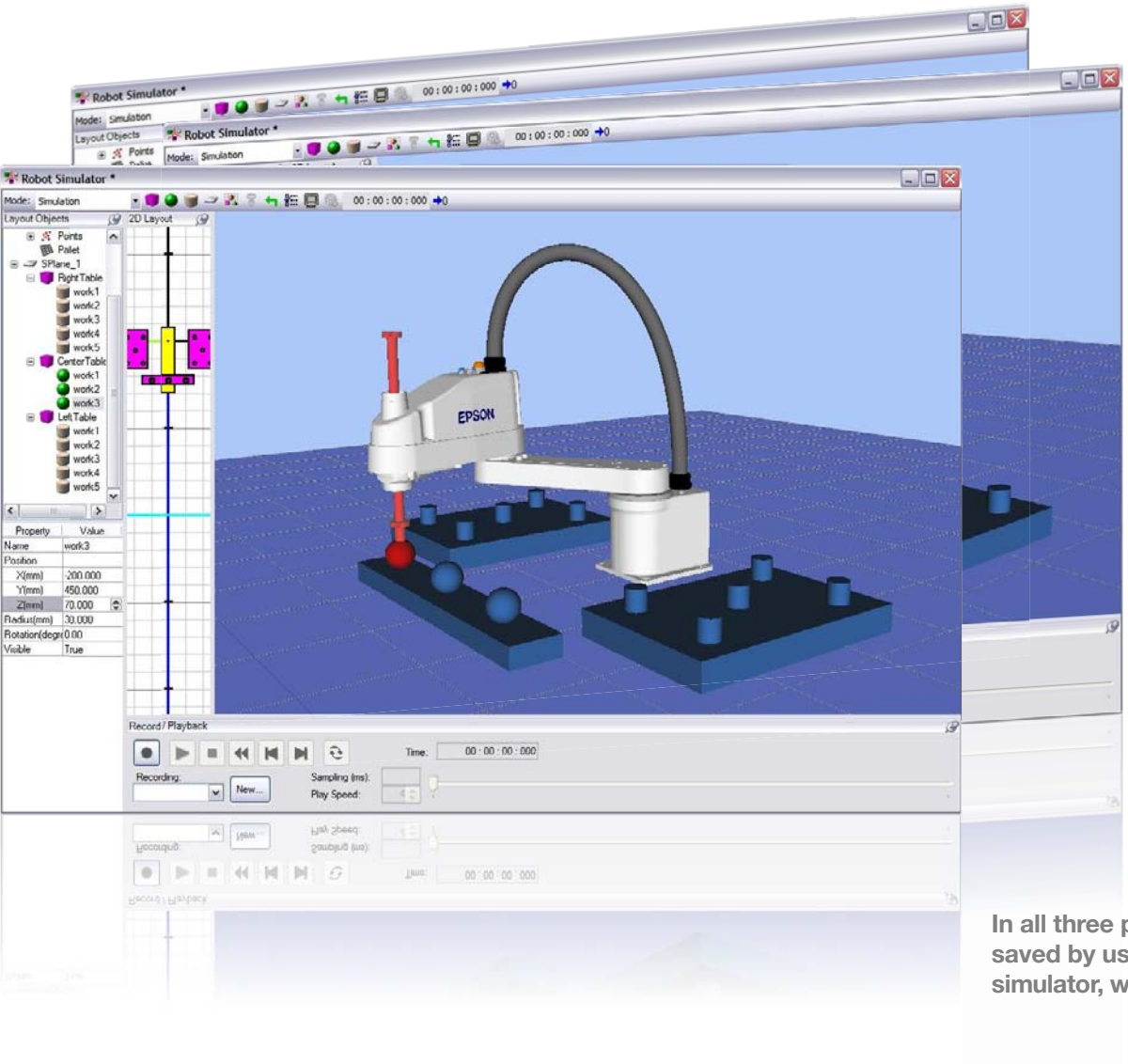
When designing your robot cell in advance, you can plan your robot cell true to the original and reliably predict the cycle times for your application. This proves the feasibility prior to even one part of the plant being produced. Later expansions of the plant can be prepared in the simulation so that the plant only needs to be stopped in exceptional cases.

PHASE 2 — **INTEGRATION**

Before being sent to the robot, the program is validated offline. In this way, programs can be created simultaneously. Even complex movement can be displayed and evaluated. Risks of collision are detected to prevent damage to the equipment.

PHASE 3 — **OPERATION AND MAINTENANCE**

Troubleshooting and program modification tasks can be comfortably carried out right from your desk. Collision detection, reachability testing and robot movements are visualised in the 3D layout.



In all three phases, time and costs are saved by using the Epson RC+ simulator, which itself is free of charge.

EVERYTHING IN SIGHT AND UNDER CONTROL: THE NEW EPSON COMPACT VISION IMAGE PROCESSING.

The Epson Compact Vision cameras leave nothing to be desired: Permanently installed or mobile, with different resolutions, with lenses of different focal lengths, integrated or with remote lens system.

- communication between robot and image processor within milliseconds with the Epson Vision Guide 5.0 software
- Short development time due to integration into RC+ development environment
- Comfortable Drag & Drop programming
- Finding of parts even in varying light conditions

EPSON **COMPACT VISION CAMERA**

EPSON **COMPACT VISION CV1**

EPSON COMPACT VISION **CV1**

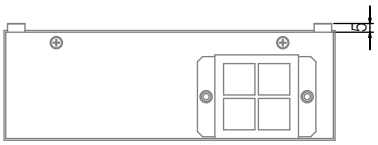
Interfaces Ethernet, USB, RS-232C
Max. 2 camera connections
Weight 1.5 kg

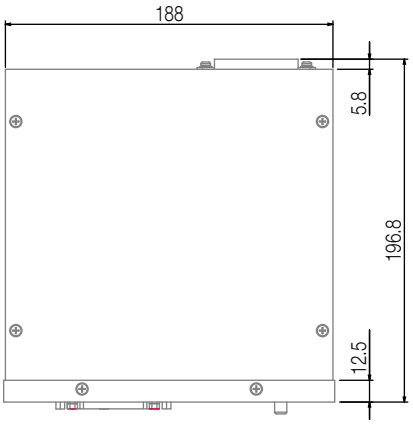
EUR 2,070
excluding sales tax

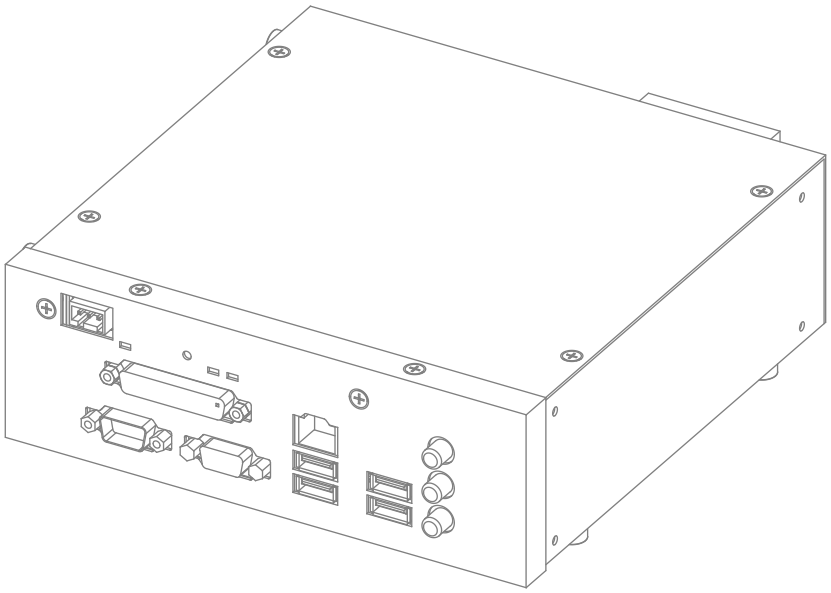
www.epson-store.de/fa

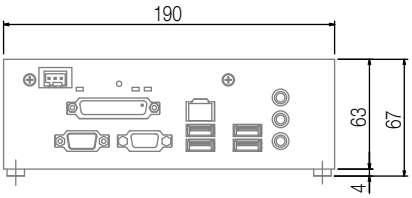
All CAD files are available for download from
www.epson.de/scaralight

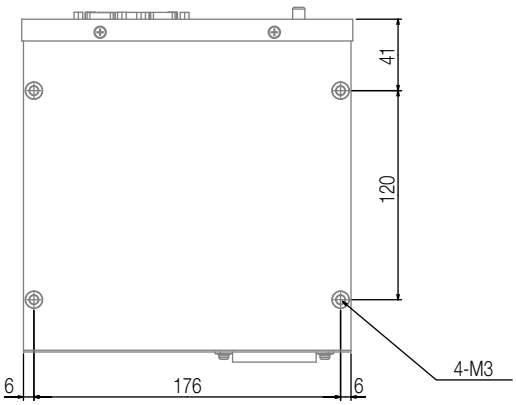
Measurements in mm

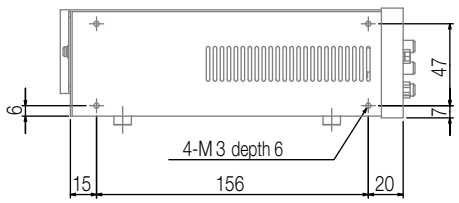












EPSON COMPACT VISION **CAMERAS**

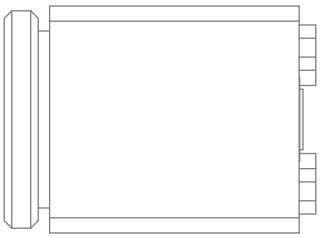
Fixed or mobile USB cameras
Weight 0.05 kg
Resolutions 640 x 480 Pixel / 1,280 x 1,024 Pixel

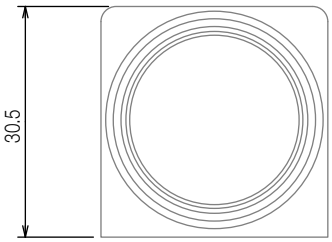
from EUR 430
excluding sales tax

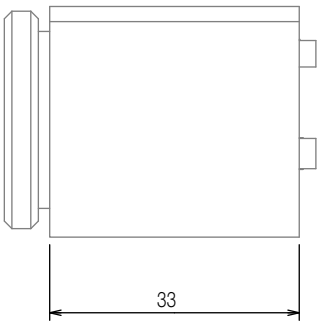
www.epson-store.de/fa

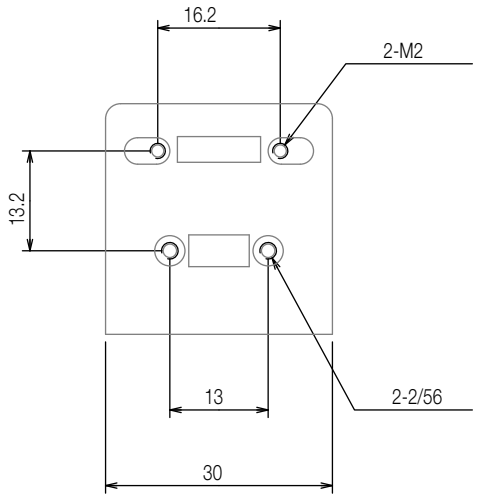
All CAD files are available for download from
www.epson.de/scaralight

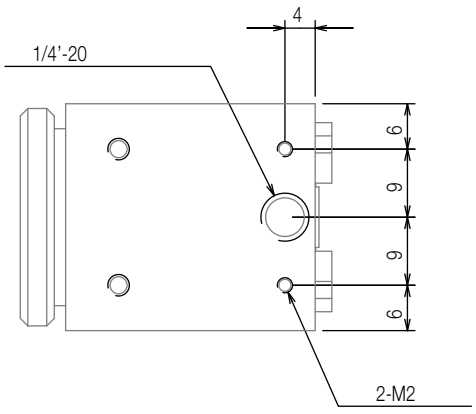
Measurements in mm











EPSON COMPACT VISION **AT A GLANCE**

	EPSON COMPACT VISION **CV1**
Interfaces	Ethernet, USB, RS-232C
Camera connections	Maximum 2 cameras
Dimensions	190 x 63 x 197 mm
Ambient temperature	0–45° C
Power consumption	DC 24V ±5%
Weight	1.5 kg
Price	**EUR 2,070**

COMPACT VISION **ACCESSORIES**

Mounting bracket set
EUR 400

Lenses 8, 12, 16, 25 or 50 mm
each EUR 220

Extension rings set
EUR 130

www.epson-store.de/fa

	FIXED **STANDARD USB CAMERA**	FIXED **HIGH RESOLUTION USB CAMERA**
Resolution	640 x 480 pixels	1,280 x 1,024 pixels
Sensor types	CMOS — 1/3" Progressive Scan	CMOS — 1/1.8" Progressive Scan
Lens mount	C-/CS-mount	C-/CS-mount
Camera connection	5 m standard USB camera cable	5 m standard USB camera cable
Dimensions without lens	33 x 30.5 x 30 mm	33 x 30.5 x 30 mm
Weight without lens	0.05 kg	0.05 kg
Price	**EUR 430**	**EUR 830**

	MOBILE **STANDARD USB CAMERA**	FIXED **HIGH RESOLUTION USB CAMERA**
Resolution	640 x 480 pixels	1,280 x 1,024 pixels
Sensor types	CMOS — 1/3" Progressive Scan	CMOS — 1/1.8" Progressive Scan
Lens mount	C-/CS-mount	C-/CS-mount
Camera connection	5 m High-Flex USB camera cable	5 m High-Flex USB camera cable
Dimensions without lens	33 x 30.5 x 30 mm	33 x 30.5 x 30 mm
Weight without lens	0.05 kg	0.05 kg
Price	**EUR 510**	**EUR 910**

All prices exclude sales tax

AS ONE OF THE PIONEERS IN ROBOTICS, INGENUITY COURSES THROUGH OUR VEINS.

- In-house Research and Development department for automation processes
- **1982**
  first freely available Epson SCARA robot in Japan
- **1986**
  the world's first cleanroom robot of class 1
- One of the world's most comprehensive SCARA model ranges
- **1997**
  first PC-based controller
- **2008**
  inventor of the G3 with left and right arm orientation
- **2009**
  inventor of the Spider: a one-of-a-kind SCARA robot with 450° envelope

SO THAT YOUR PRODUCTION **RUNS TIRELESSLY**

Epson robot systems: Precise, fast and absolutely reliable.

One of the world's most comprehensive ranges of SCARA models, 6 axis robots, controllers and software below to our range of products.

Our robots palletise, saw, mill, drill, grind, mount, move and assemble. They work precisely and at breathtaking speed in these and many more applications — often up to 24 hours a day.

Epson Spider robot

A real economic miracle:
With its unique construction, the Epson Spider reaches every angle of its envelope and within cycle times previously unheard of.

Epson 6-axis robot

Flexibility allowed by its rotating axes. Thanks to unrivalled point and path accuracy, complex work processes can be precisely achieved.

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Compact, powerful and precise, even at high speeds. Epson has the world's most comprehensive range of SCARA robots — more than 200 models.

Epson controllers

High power in the smallest space. The Epson controllers are based on a robust, integrated system and are able to control both manipulators and periphery devices.

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We offer a complete pre and after sales support program as a service. This includes the following and more:

- Feasibility studies for maximum planning and project security
- Support during planning and implementation
- Introductory seminars, programming, maintenance or operator trainings
- Inspection and individual maintenance concepts
- Hotline service, repair service on site
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EPSON INDUSTRY SOLUTIONS CENTRE — **THAT'S WHERE WE FIND YOUR SOLUTION!**

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